

Supplemental Amendment submitted in response
to Office Action mailed February 242004
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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer implemented method for communicating between a computing system of a process module, wherein the process module has a process chamber, and a first sensor, comprising the steps of:

initializing the computing system of the process module;

initializing the first sensor, which is able to measure a first parameter in the process chamber;

transmitting a connect message from the first sensor to the computing system of the process module;

transmitting a command to get reportable specification, ~~which informs the process module computing system of the type of data that will be provided from the first sensor,~~ from the computing system of the process module to the first sensor; and

automatically transmitting, upon receiving the command to get reportable specification, a reportable specification message from the first sensor to the computing system of the process module, the reportable specification message being configured to inform the computing system of the processing module at least a data type specification transmitted by the first sensor; and

thereafter receiving, using the computing system of the processing module and the reportable specification message received from the first sensor, sensor data from the first sensor.

2. (Original) The computer implemented method, as recited in claim 1, further comprising the steps of:

spawning within the computing system of the process module a connection monitor task;

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spawning from the connection monitor task within the computing system of the process module a first sensor messaging task;

transmitting an acknowledgement of the command to get reportable specification from the first sensor to the computing system of the process module; and

transmitting an acknowledgement of the reportable specification message from the computing system of the process module to the first sensor.

3. (Previously Presented) The computer implemented method, as recited in claim 2, further comprising the steps of:

transmitting command to get an alarm table command from the first sensor to the computing system of the process module;

transmitting an acknowledgement of the command to get the alarm table from the computing system of the process module to the first sensor;

transmitting an alarm table from the computing system of the process module to the first sensor, wherein the alarm table designates the number of alarms, alarm identification numbers, and descriptions of the alarms; and

transmitting an acknowledgement of the alarm table from the first sensor to the computing system of the process module.

4. (Original) The computer implemented method, as recited in claim 3, further comprising the steps of:

transmitting command to get time and initialization data from the first sensor to the computing system of the process module;

transmitting an acknowledgement of the command to get time and initialization data from the computing system of the process module to the first sensor;

transmitting time and initialization data from the computing system of the process module to the first sensor; and

transmitting an acknowledgement of the time and initialization data from the first sensor to the computing system of the process module.

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5. (Original) The computer implemented method, as recited in claim 4, further comprising the steps of:

- transmitting a process related command related to the execution of an action in the process chamber from the computing system of the process module to the first sensor;
- executing the action in the process chamber, wherein said action relates to the processing of semiconductor related devices; and
- transmitting an acknowledgement of the process related command from the first sensor to the computing system of the process module.

6. (Original) The computer implemented method, as recited in claim 5, further comprising the steps of:

- initializing a second sensor, which is able to measure a second parameter in the process chamber;
- transmitting a connect message from the second sensor to the computing system of the process module;
- transmitting a command to get reportable specification from the computing system of the process module to the second sensor;
- transmitting a reportable specification message from the second sensor to the computing system of the process module;
- initializing a third sensor, which is able to measure a third parameter in the process chamber;
- transmitting a connect message from the third sensor to the computing system of the process module;
- transmitting a command to get reportable specification from the computing system of the process module to the third sensor; and
- transmitting a reportable specification message from the third sensor to the computing system of the process module.

7. (Original) The computer implemented method, as recited in claim 6, further comprising the steps of:

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spawning from the connection monitor task within the computing system of the process module a second sensor messaging task;
transmitting an acknowledgement of the command to get reportable specification from the second sensor to the computing system of the process module;
transmitting an acknowledgement of the reportable specification message from the computing system of the process module to the second sensor;
spawning from the connection monitor task within the computing system of the process module a third sensor messaging task;
transmitting an acknowledgement of the command to get reportable specification from the third sensor to the computing system of the process module; and
transmitting an acknowledgement of the reportable specification message from the computing system of the process module to the third sensor.

8. (Original) The computer implemented method, as recited in claim 7, further comprising the steps of:

transmitting command to get an alarm table command from the second sensor to the computing system of the process module;
transmitting an acknowledgement of the command to get the alarm table from the computing system of the process module to the second sensor;
transmitting an alarm table from the computing system of the process module to the second sensor;
transmitting an acknowledgement of the alarm table from the second sensor to the computing system of the process module;
transmitting command to get an alarm table command from the third sensor to the computing system of the process module;
transmitting an acknowledgement of the command to get the alarm table from the computing system of the process module to the third sensor;
transmitting an alarm table from the computing system of the process module to the third sensor; and

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transmitting an acknowledgement of the alarm table from the third sensor to the computing system of the process module.

9. (Original) The computer implemented method, as recited in claim 8, further comprising the steps of:

transmitting command to get time and initialization data from the second sensor to the computing system of the process module;

transmitting an acknowledgement of the command to get time and initialization data from the computing system of the process module to the second sensor;

transmitting time and initialization data from the computing system of the process module to the second sensor;

transmitting an acknowledgement of the time and initialization data from the second sensor to the computing system of the process module;

transmitting command to get time and initialization data from the third sensor to the computing system of the process module;

transmitting an acknowledgement of the command to get time and initialization data from the computing system of the process module to the third sensor;

transmitting time and initialization data from the computing system of the process module to the third sensor; and

transmitting an acknowledgement of the time and initialization data from the third sensor to the computing system of the process module.

10. (Withdrawn) An apparatus for processing semiconductor related devices, comprising:

a process chamber for processing semiconductor related devices;

a computing system for controlling the process chamber, electrically connected to the process chamber;

a network electrically connected to the computing system;

a first sensor electrically connected to the network;

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a connection monitor task, which is spawn in the computing system after the computing system is initialized; and

a first sensor messaging task, which is spawn from the connection monitor task within the computing system of the process module after the first sensor initiates a connection with the computing system.

11. (Withdrawn) The apparatus, as recited in claim 10, further comprising:

a second sensor electrically connected to the network; and

a second sensor messaging task, which is spawn from the connection monitor task within the computing system of the process module after the second sensor initiates a connection with the computing system.

12. (Withdrawn) The apparatus, as recited in claim 11, further comprising:

a third sensor electrically connected to the network; and

a third sensor messaging task, which is spawn from the connection monitor task within the computing system of the process module after the third sensor initiates a connection with the computing system.

13. (Withdrawn) The apparatus, as recited in claim 12, wherein the first sensor, the

second sensor, and the third sensor are connected as clients to the computing system of the process module.

14. (Withdrawn) The apparatus, as recited in claim 13, wherein the first sensor, the

second sensor, and the third sensor are hot swappable plug and play.

15. (Withdrawn) The apparatus, as recited in claim 14, wherein said computing system,

further comprises a heartbeat message tool which sends a heartbeat message to a sensor if the computing system does not receive a message from the sensor within a period of time.

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16. (Previously Presented) The computer implemented method, as recited in claim 1,
wherein the reportable specification also provides possible range of data and frequency of data
that will be provided from the sensor.

17. (Previously Presented) The computer implemented method, as recited in claim 16,
wherein the reportable specification further provides whether the data needs to be requested from
the sensor or will be automatically sent.

18. (Previously Presented) The computer implemented method, as recited in claim 1,
wherein the reportable specification provides sufficient sensor information so that a sensor driver
is not used.